DOCUMENT RESUME

ED 361 382 TM 020 481

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TITLE Kentucky Writing and Math Portfolios.
PUB DATE Mar 93
NOTE 14p.; Paper presented at a National Conference on Creating the Quality School (March 1993).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Assessment; Educational Innovation; Educational Technology; Elementary Secondary Education; *Mathematics Achievement; *Portfolios (Background Materials); Scoring; State Programs; *Student Evaluation; Writing Achievement; *Writing Evaluation
IDENTIFIERS *Kentucky; Kentucky Education Reform Act 1990; *Performance Based Evaluation

ABSTRACT

Teachers in Kentucky are using portfolios to determine strengths and weaknesses of individual students. Consequently, instruction is centered totally around the student. The implementation of portfolios sends the message to students that their first efforts should not be their last. Revision is part of improvement, and students are expected to reevaluate so that their portfolios represent their best work The rationale and procedures for using mathematics and writing portfolios in Kentucky schools are explored. The use of portfolios grows from the Kentucky Educational Reform Act and is part of the performance based assessment mandated in 1992. The mathematics portfolio for grade 4, presently in use, contains a table of contents, a letter to the reviewer, and five to seven entries that reflect the students' best work in the classroom throughout the year. The grade 4 writing portfolio contains examples of several different kinds of writing, as well as a best piece chosen by the student. Portfolios are scored by the teacher or by scoring teams in the school. As computer technology becomes more widespread in Kentucky schools, portfolios may take innovative forms that take up less space and can be easily recalled. (Contains 16 references.) (SLD)

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Kentucky Writing and Math Portfolios

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Running Head: KENTUCKY PORTFOLIOS

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ABSTRACT

Quality assessment makes it possible for teachers to accurately identify the learning needs of the students. Student portfolios present each student's best work collected throughout the year. Portfolios give a picture of what is really going on in the classroom.

Teachers in Kentucky are using portfolios to determine strengths and weaknesses of individual students. Therefore, instruction is centered totally around the student. The implementation of portfolios sends the message to students that their first effort should not be their last. Revision is part of improvement. Students are expected to re-evaluate so that their portfolios represent their best work.

The purpose of this paper is to explain the rationale and procedures of using math and writing portfolios as alternative forms of assessment.

Kentucky Writing and Math Portfolios

The Kentucky Education Reform Act

The Kentucky Education Reform Act, better known as KERA to Kentucky teachers, has mandated a wave of change for students, teachers, and administrators. One reason for the dramatic change is dissatisfaction over common testing practices. As classroom teachers, we often ask ourselves, "How are the items on this test related to the activities with which my students are involved ?" (Tierney,1991) Anyone who works closely with children is amazed how, on a daily basis, they demonstrate intelligences not related to traditional assessment (Hebert,1992).

One of the first steps taken by Kentucky lawmakers to improve assessment and learning has been to develop a list of capacities expected of each Kentucky student upon graduation from high school:

(1) Communication skills necessary to function in a complex and changing civilization;
(2) Knowledge to make economic, social, and political choices;
(3) Understanding of governmental processes as they affect the community, the state, and the nation;
(4) Sufficient self-knowledge and knowledge of his mental and physical wellness;
(5) Sufficient grounding in the arts to enable each student to appreciate his or her cultural and historical heritage;
(6) Sufficient preparation to choose and pursue his life's work intelligently; and
(7) Skills to enable him to compete favorably with students in other states.

(Kentucky School Laws, 1992)

In order to assess whether Kentucky students possess these traits, a three-part assessment has been implemented:

(1) multiple-choice and short-essay questions (multiple choice to be eliminated by 1996)
(2) performance tasks that call for students to solve simulated, real-life problems
(3) portfolios that present each student's best work collected throughout the year

(Kentucky Department of Education World Class Standards, 1992)

Portfolios are in alignment with KERA's philosophy that "all students can learn." Portfolios send the message that their first effort is not their last. Students revise and improve throughout the year. Portfolios give a picture of what is going on in the classroom. Portfolios focus on the strengths of the students. In the past, achievement tests measured what students knew. Kentucky's new performance-based assessments measure what students know and what they can do with what they know. No child fails in the new assessment program. Instead, they are given a descriptor of novice, apprentice, proficient, or distinguished-novice being the lowest level. However, it recognizes the child as a beginner rather than a failure.

What is a Portfolio?

"A portfolio can best be described as a container of evidence of a person's skills. It is more than a folder; it is a deliberate, specific collection of accomplishments" (Hamm and Adams, 1991). Although a new concept in Kentucky, portfolios have been used since 1984 in England, Scotland and Wales (Wasserman, 1991). Vermont has developed a successful system, upon which Kentucky's project is based.

Development of the portfolio involves a student making choices concerning what goes into his/her collection through conferencing with a teacher. The student is sometimes referred to as a "stakeholder", defined as anyone who has an interest in or is made

vulnerable by what is in a portfolio. The teacher takes on the role of "secondary stakeholder", anyone with a direct interest in the portfolio (Frazier and Paulson, 1992). In Kentucky, teachers are "interested" because portfolio assessment is a major part of deciding if schools and teachers are effective or not!

Kentucky Math Portfolios

In Kentucky, students keep math portfolios and writing portfolios. Kentucky Math Portfolios show what has been going on in the classroom throughout the year. The philosophy behind the math portfolio is:

(1) To focus on strengths rather than weaknesses.
(2) To value a variety of learning styles.
(3) To value math as a subject that requires careful and thoughtful investigation.
(4) To encourage students to communicate their understandings of mathematics at a high level of proficiency.
(5) To promote a vision of mathematics that goes beyond correct answers.
(6) To emphasize the role of the student as the active mathematician and the teacher as a guide.

(Kentucky Department of Education Math Portfolio Teacher's Guide, 1992)

The portfolios assess what students do, not who is better than whom. Each student selects work to make his/her best case. Every student has a realistic chance to show what he or she has learned. These circumstances typify real world assessment of job performance.

The Kentucky fourth grade mathematics portfolio includes:

(1) A table of contents
(2) A letter to the reviewer
(3) Five to seven best entries from the following categories
    a. Writing - journal entries, math autobiographies, explanations, justifications, etc.
    b. Investigations - an inductive search for an answer to a question.

c. Applications - real world skills.
d. Interdisciplinary - the use of math in other subject areas.
e. Non-routine Problems - problems for which the solution is not immediately evident.
f. Projects - activities which extend over a period of days or weeks.

(Kentucky Department of Education Math Portfolio Teacher's Guide, 1992)

Portfolio entries are not extra assignments; they reflect what is done in the classroom daily. Students work on their entries throughout the year. Teachers and students conference to choose their best entries. Entries should show the evidence of the use of calculators, computers, manipulatives, and other mathematical tools. The completed portfolio is assessed as a whole using the holistic scoring guide.

Kentucky Writing Portfolios

In the school year 1993-1994, students experimented with math portfolios for the first time. The preceding year, the state required only writing portfolios. The goals of Kentucky writing portfolio assessment are to:

(1) provide students with the skills, knowledge, and confidence necessary to become independent thinkers and writers.
(2) promote each student's ability to communicate to a variety of audiences for a variety of purposes.
(3) document students' performance on multiple tasks over time.
(4) integrate performance assessment with classroom instruction.
(5) provide information upon which to base ongoing development of curriculum that is responsive to student needs.

(Kentucky Department of Education Writing Handbook, 1992)

The development of writing portfolios cannot normally be "added to" an existing English curriculum. Students and teachers will work through the system of

drafting, revising, and publishing. Within this framework, a teacher will document student strengths and weaknesses and base classroom instruction on this data. Instead of working through the pages of the English book day by day, a teacher might see that his/her class is having difficulty with title capitalization and choose the book lesson that corresponds to this topic.

Paulson and Paulson, leaders in the field of portfolio development, state, "Portfolios tell a story . . . put in anything the helps tell the story." (cited in Hebert, 1992).

Kentucky fourth grade writing portfolios include:

(1) A table of contents
(2) One personal narrative
(3) One poem, play/script, or piece of fiction
(4) One piece of writing, the purpose of which is to
    a. present/support a position, idea, or opinion
       --OR--
    b. tell about a problem and its solution
       --OR--
    c. inform
(5) One piece of writing from a study area other than English/Language Art. Any of the other portfolio entries may also come from writing across the curriculum.
(6) A "best piece"
(7) A letter to the reviewer: A letter written by the student discussion his/her "Best Piece" and reflecting upon his/her growth as a writer

(Kentucky Department of Education
Writing Handbook, 1992)

The subject area category encourages teachers from all subjects to assign writing and help students develop their skills. In fact, even though portfolio assessment is the major responsibility of fourth, eighth, and twelfth grade language arts teachers, some school systems have devised plans where all subject area teachers at all grade levels are involved in training, development, and assessment of portfolios so that schools work as teams with the goal of student writing improvement. The scoring methods used in math portfolio and writing portfolio assessment are parallel. As with math portfolio assessment, the

categories of novice, apprentice, proficient, and distinguished are used in writing portfolio assessment. The state of Kentucky provides benchmarks, or exemplars, for fourth, eighth, and twelfth grade portfolios. Each benchmark is a paper actually written by a Kentucky student. A benchmark shows what a novice, apprentice, proficient, or distinguished paper "looks like." Benchmarks and scoring guides provide the framework upon which portfolios are consistently scored.

Scoring and Recordkeeping

In Kentucky, teachers develop scoring teams. Each portfolio can be scored by the student's teacher or another member of the team. Sometimes the portfolios are scored by two or three members of the scoring team. In this way, teachers feel that they have consistency among themselves. At this point, the state randomly chooses five portfolios from each group of scored portfolios to go through the blind rescoring process. The scores are documented on rescoring worksheets. Using a simple formula, consistency is appraised. If the scores are determined to be inconsistent, scores are adjusted. Cluster leaders, teachers trained in math and writing portfolio procedures, meet with teachers for further scoring practice.

Several different methods of record keeping are involved in the portfolio process. Checklists are often used in order to check for understanding, achievement, attitudes, and effort. Checklists can be used in the form of index cards for each child, file folders, etc. Conferencing plays a major role in portfolios and student achievement. A conference is a brief meeting between the teacher and the individual child in which the teacher engages the child in a discussion about the work and asks effective questions that will clarify how the child is developing (Bunce-Crim, 1992). Peer conferencing is also appropriate. Students often conference with each other about certain pieces in their portfolios. Self-checklists are also valuable in the portfolios. The most effective evaluations are made while students are actually doing the work. Teachers should become involved in the writing process. Writing along with the students can be an effective means of showing the importance or writing.

Students keep two portfolios - a working portfolio and an assessment portfolio. Students have ongoing access to their working portfolio, which holds all of their work for a certain period of time. Working portfolios are kept in plastic crates, accordian files, baskets, or pizza boxes. Older students sometimes prefer to use spiral notebooks. The assessment portfolio contains work selected by the students. Teachers conference with the children to help them select their best pieces for the assessment portfolio. However, it should always be the choice of the student. A paragraph might be written explaining why a student chose a certain piece. In Kentucky, this type of writing comes in the form of a "Letter to the Reviewer." Throughout the year, students may revise and improve pieces in their assessment portfolios.

Once teachers begin to develop portfolios and base classroom instruction on areas of needed improvement, they will realize that their entire system of grading will change. No longer will the traditional report card give to parents the information they need. One way to supply additional information is to provide a supplementary evaluation form.

Portfolios as a Springboard for Communication

Sometimes a school system will opt to change the entire format of the regular report card to keep up with progressive modes of instruction such as portfolio development (Lamme & Hysmith, 1991). An even better way of keeping parents informed is student/parent conferencing. When students create portfolios, they can also take on the responsibility of sharing the progress they have made (Hebert, 1992). This can be done by allowing students to take portfolios home and to spend 15-20 minutes sharing with parents (Tierney, 1992). Teachers might send home a list of suggestions for sharing the portfolio. In the state of Kentucky, portfolios must be on file at the conclusion of the school year, but it is a local decision as to where they will be stored. Portfolios are a wonderful source of information; therefore, sharing a student's portfolio with his/her next year's teacher can be productive. The portfolio might then become part of the student's permanent record (Tierney, 1992).

Sharing portfolios can be exciting and fun for students. A school could have a portfolio evening

where students share their portfolios with parents, community members, business leaders, etc. For example, in Michigan, high school students complete Employability Skills Portfolios. The completed portfolio includes numerous school records, personal journals, school awards and honors, sample schoolwork, and student-made resumes. Portfolios are shared with parents, administrators, and future employers. This establishes a partnership between school and community-what students learn in school and what they can accomplish in the real world. The basic premise of the Michigan profile is that learning is a lifelong process. Students upgrade their portfolios as they gain new or more advanced skills (Stemmer, Brown, and Smith, 1992). Students might also enjoy teachers creating and sharing their own portfolios. One teacher included: a letter from her mother, a recipe, the cover of her favorite book, a list of books read in the last two years, and a self-reflection that told why she chose those items (Hansen, 1992).

Incorporating Technology

As sophisticated computer technology becomes more and more accessible to school systems, student information can be stored in ways that take up less space and can be easily recalled. Through a grant from IBM and Project Zero at Harvard, students at Conestoga Elementary School in rural Wyoming are storing written work, photographs, and video presentations on laser disks. These "portfolios of the future" are shared with classmates, teachers, parents, and administrators as a means of assessment in the areas of verbal ability, physical accomplishment, artistic achievement, and self-assurance (Campbell, 1992). At Bellerive Elementary in St. Louis, students are creating reading portfolios with the use of a computer program called The Grady Profile-Portfolio Assessment. Student voices are recorded reading sample passages. Students use an assessment log to record their reactions to their progress. "Recording their evaluation, not our judgment, transfers ownership to the rightful owner of learning. . . the student." (Hetterscheidt, Pott, Russell, and Tchang, 1992).

Conclusion

Quality assessment makes it possible for teachers to identify accurately the learning needs of individual students and student groups, to review the appropriateness of curriculum goals and content, and to evaluate the quality of their own teaching (Kentucky Department of Education Math Portfolio Teacher's Guide, 1992). In successful classrooms, instruction and assessment are closely linked.

Through ongoing development of writing and math portfolios, teachers in the state of Kentucky are targeting student needs and basing classroom instruction on those needs. Students are taking an active role in the process of their lifelong education. Through the writing and math portfolio process, schoolrooms in Kentucky have become active, dynamic environments full of ideas, noise, and hope of bright, productive futures for our students.

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